

Amendments to the Claims

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A mass spectrometer comprising an ion source to produce ions from a substance to be detected and detector means to detect a quantity of ions incident on said detector means wherein the said detector means includes at least two detector elements, each of which elements detect at least a part of said quantity of ions from the ion source, attenuation means and means for generating secondary electrons from said ions, wherein the attenuation means are placed before any of the means for generating secondary electrons and act to attenuate the quantity of ions reaching at least one said detector element relative to another of the at least two detector elements, and wherein at least one of said detector elements is connected to a time-to-digital converter (TDC) to allow counting of detected ions and at least one of said detector elements is connected in parallel to both a time-to digital converter (TDC) and an analogue-to digital converter (ADC) for ion detection.

2. (Original) A mass spectrometer according to Claim 1, wherein attenuation means is such that both incident ions and secondary electrons generated by said incident ions are attenuated.

3-6. (Canceled)

7. (Previously presented) A mass spectrometer according to Claim 1, wherein an earthed grid is provided between the elements to minimise capacitive coupling between elements.

8. (Canceled)

9. (Previously presented) A mass spectrometer according to Claim 1, wherein the at least one detector element is adapted to allow a proportion of incident signal to pass through the element without being detected.

10. (Original) A mass spectrometer according to Claim 9, wherein the adaptation of the at least one detector comprises a plurality of perforations or other apertures in the element.

11. (Canceled)

12. (Previously presented) A mass spectrometer according to Claim 1, wherein the attenuation device comprises a perforated plate.

13. (Previously presented) A mass spectrometer according to claim 10, wherein the cross-sectional area of the perforations compared to the total cross-sectional area of the plate is approximately 1 to 100.

14. (Canceled)

15. (Previously presented) A mass spectrometer according to Claim 1, wherein each detector element comprises a separate plate anode.

16. (Previously presented) A mass spectrometer according to Claim 1, wherein each detector element is connected via an amplifier to a time to digital converter (TDC) to allow counting of detected ions.

17. (Previously presented) A mass spectrometer according to Claim 1, wherein the detector elements are disposed one behind the other relative to the ion source.

18. (Previously presented) A mass spectrometer according to Claim 1, wherein the detector elements are disposed one above the other in a plane extending generally perpendicular to the direction of ion travel.

19. (Previously presented) A mass spectrometer according to Claim 1, wherein the attenuation means is formed by at least one of the detector elements.

20. (Previously presented) A mass spectrometer according to Claim 1, wherein said attenuation device is provided between the ion source and the detector elements which acts to reduce the number of ions reaching at least one of said elements or at least a part thereof.